



IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

9504-147-2

1410 North Hilton, Boise, ID 83706-1255, (208) 334-0502

Philip E. Batt, Governor

April 11, 1997

Kenneth Elkington, Director
Facilities, Environmental, Health & Safety
Zilog, Incorporated
2601 11th Avenue, North Extension
Nampa, Idaho 83687

RE: Zilog, Inc. (Nampa - Silicon Computer Chip Manufacturing)
#9504-047-2 - Tier II Operating Permit (#027-00056)

Dear Mr. Elkington:

On March 17, 1997, the Division of Environmental Quality (DEQ) issued you your final Tier II Operating Permit. DEQ has discovered that there is a discrepancy between the operating requirement in Section 2.2.1 and the Building 1 & 2 VOC emission limits in Appendix A of the Permit. The operating requirements in Section 2.2.1 of the Permit have been corrected to agree with the VOC emission limits in Appendix A of the Permit. Please replace Page 2 of the Permit with the enclosed page.

DEQ regrets any inconvenience this discrepancy may have caused. If you have any questions regarding the terms or conditions of the final permit, please contact me at (208) 373-0502.

Sincerely,

Almer Casile, Air Quality Engineer
Air Quality Permitting Bureau
Air & Hazardous Waste

ABC:jrz...\zilog\zillogerr.COV

Enclosure

cc: Source File
COF

AIR POLLUTION OPERATING PERMIT

PERMIT NUMBER

Permittee AND LOCATION

Zilog, Incorporated - Silicon Computer Chip Manufacturing
Tier II Operating Permit
Nampa, Idaho

027 - 00056

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Buildings 1 & 2 (MOD I & MOD II)

1. EMISSION LIMITS

1.1 Emergency Generators

Emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) from each emergency generator located at Building 1 (NB1) and Building 2 (NB2) shall not exceed any corresponding emission rate limit listed in Appendix A.

1.2 Boilers

Emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) from the common stack on Boilers #1, #2, and #3 at NB1, and Boilers #1 and #2 at NB2 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.3 Buildings 1 and 2

Emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from NB1 and NB2, excluding emissions of volatile organic compounds (VOCs) from equipment listed in Sections 1.1 and 1.2 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 Emergency Generators -- Hours of Operation

The hours of operation of each emergency generator located at NB1 and NB2 shall not exceed seventeen (17) hours per month, nor shall it exceed 200 hours per year for maintenance. These limits excludes operation during periods of power outages to the facility.

2.2 Chemical Usage

2.2.1 Total calculated pounds of VOCs used minus total calculated pounds of VOCs shipped as hazardous waste shall not exceed 17,272 pounds per calendar month and 138,185 pounds per year, based on a twelve (12) month rolling total.

2.2.2 No Permit to Construct pursuant to IDAPA 16.01.01.200 et seq., is required for physical changes and/or changes in the method of operation in NB1 and NB2, excluding changes to combustion equipment listed in Sections 1.1 and 1.2 of this permit, so long as the following conditions are met:

- a) Emissions of volatile organic compounds (VOCs) from NB1 and NB2 shall not exceed the emission rate listed in Appendix A.
- b) The physical changes and/or changes in the method of operation in NB1 and NB2 shall be subject to Sections 2, 3, and 4 of this permit.
- c) The physical changes in and/or changes in the method of operation shall comply with all applicable requirements, including, but not limited to, volatile organic compounds (VOC) subject to IDAPA 16.01.01.210 of Rules for the Control of Air Pollution in Idaho; and
- d) The physical changes and/or changes in the method of operation, that increase any air pollutant other than volatile organic compounds (VOCs), shall comply with IDAPA 16.01.01.220 through 225 of Rules.

ISSUED: MARCH 17, 1997
EXPIRES: MARCH 17, 2002



IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

1410 North Hilton, Boise, ID 83706-1255, (208) 334-0502

Philip E. Batt, Governor

March 17, 1997

CERTIFIED MAIL #P 875 705 102

Kenneth Elkington, Director
Facilities, Environmental, Health & Safety
Zilog, Incorporated
2601 11th Avenue, North Extension
Nampa, Idaho 83687

RE: Zilog, Inc. (Nampa - Silicon Computer Chip Manufacturing) - #9504-047-2
Tier II Operating Permit (#027-00056)

Dear Mr. Elkington:

On April 28, 1995, the Division of Environmental Quality (DEQ) received a Tier II Operating Permit (OP) application from Zilog, Incorporated (Zilog). On August 31, 1995, DEQ deemed Zilog's Tier II OP application complete.

On January 27, 1997, a proposed Tier II OP was issued for public comment. The public comment period was from February 12, 1997, through March 14, 1997. On February 26, 1997, DEQ received comments about the content of the proposed OP. These comments were addressed by DEQ in the response package.

Based on review of your application, state and federal rules and regulations, and comments received, DEQ finds this project meets the Provisions of IDAPA 16.01.01.400 (Rules for the Control of Air Pollution in Idaho). Therefore, enclosed is your Tier II OP (#027-00056) for the emission sources that exist at the facility.

You, as well as any other entity, may have the right to appeal this final agency action pursuant to the Idaho Department of Health and Welfare Rules, Title 5, Chapter 3, "Rules Governing Contested Case Proceedings and Declaratory Rulings," by filing a petition with the Hearings Coordinator, Department of Health and Welfare, Administrative Procedures Section, 450 West State Street - 10th Floor, Boise, Idaho 83720-5450, within thirty-five (35) days of the date of this decision.

Please be advised that this Tier II OP is subject to permit application fees of five hundred dollars (\$500.00) in accordance with IDAPA 16.01.01.470. IDAPA 16.01.01.470 became effective on March 7, 1995. Information regarding the permit application fees will be sent to you shortly.

If you have any questions regarding the terms or conditions of the enclosed permit, please contact Martin Bauer, Chief, Air Quality Permitting Bureau, at (208) 373-0502.

Sincerely,

Orville D. Green
Assistant Administrator
Air & Hazardous Waste

ODG\MB\ABC\jrj...\permit\zilog\zilog-f.001

Enclosure

cc: S. West, Boise Regional Office
Source File
COF

STATE OF IDAHO
AIR POLLUTION
OPERATING PERMIT

GENERAL INFORMATION

PERMIT NUMBER

0 2 7 - 0 0 0 5 6

AQCR

0 6 4

CLASS

A 2

SIC

3 6 7 4

ZONE

1 1

UTM COORDINATE (km)

5 3 7

5

4 8 2 7

5

1. Permittee

Zilog, Incorporated

2. PROJECT

Tier II Operating Permit

3. ADDRESS

2601 11th Avenue N. Extension

TELEPHONE #

(208) 468-2600

COUNTY

Canyon

4. CITY

Nampa

STATE

Idaho

ZIP CODE

83687

5. PERSON TO CONTACT

Kenneth Elkington

TITLE

Director - Facilities, Environmental, Health & Safety

6. EXACT PLANT LOCATION

North ¼ of the Southeast ¼ of section 14, Township 3 North, Range 2 West

7. GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS

Semiconductor Manufacturing

8. GENERAL CONDITIONS

This permit is issued according to the Rules for the Control of Air Pollution in Idaho, Section 16.01.01.400 and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be operated by this permit.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED IN THE APPLICATION AND THE DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY'S (DEQ) TECHNICAL ANALYSIS OF THE SUPPLIED INFORMATION. CHANGES IN DESIGN OR EQUIPMENT, THAT RESULT IN ANY CHANGE IN THE NATURE OR AMOUNT OF EMISSIONS, MAY BE A MODIFICATION. MODIFICATIONS ARE SUBJECT TO DEQ REVIEW IN ACCORDANCE WITH Section 16.01.01.200 OF THE Rules for the Control of Air Pollution in Idaho.

ISSUED MARCH 17, 1997

DATE

EXPIRES MARCH 17, 2002

DATE

William D. Green
ASSISTANT ADMINISTRATOR
DIVISION OF ENVIRONMENTAL QUALITY

AIR POLLUTION OPERATING PERMIT

PERMIT NUMBER

Permittee AND LOCATION

Zilog, Incorporated - Silicon Computer Chip Manufacturing
Tier II Operating Permit
Nampa, Idaho

027 - 00056

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Buildings 1 & 2 (MOD I & MOD II)

1. EMISSION LIMITS

1.1 Emergency Generators

Emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) from each emergency generator located at Building 1 (NB1) and Building 2 (NB2) shall not exceed any corresponding emission rate limit listed in Appendix A.

1.2 Boilers

Emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) from the common stack on Boilers #1, #2, and #3 at NB1, and Boilers #1 and #2 at NB2 shall not exceed any corresponding emission rate limit listed in Appendix A.

1.3 Buildings 1 and 2

Emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from NB1 and NB2, excluding emissions of volatile organic compounds (VOCs) from equipment listed in Sections 1.1 and 1.2 shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 Emergency Generators -- Hours of Operation

The hours of operation of each emergency generator located at NB1 and NB2 shall not exceed seventeen (17) hours per month, nor shall it exceed 200 hours per year for maintenance. These limits excludes operation during periods of power outages to the facility.

2.2 Chemical Usage

2.2.1 Total calculated pounds of VOCs used minus total calculated pounds of VOCs shipped as hazardous waste shall not exceed 16,196 pounds per calendar month and 129,559 pounds per year, based on a twelve (12) month rolling total.

2.2.2 No Permit to Construct pursuant to IDAPA 16.01.01.200 et seq., is required for physical changes and/or changes in the method of operation in NB1 and NB2, excluding changes to combustion equipment listed in Sections 1.1 and 1.2 of this permit, so long as the following conditions are met:

- a) Emissions of volatile organic compounds (VOCs) from NB1 and NB2 shall not exceed the emission rate listed in Appendix A.
- b) The physical changes and/or changes in the method of operation in NB1 and NB2 shall be subject to Sections 2, 3, and 4 of this permit.
- c) The physical changes in and/or changes in the method of operation shall comply with all applicable requirements, including, but not limited to, volatile organic compounds (VOC) subject to IDAPA 16.01.01.210 of Rules for the Control of Air Pollution in Idaho; and
- d) The physical changes and/or changes in the method of operation, that increase any air pollutant other than volatile organic compounds (VOCs), shall comply with IDAPA 16.01.01.220 through 225 of Rules.

ISSUED: MARCH 17, 1997
EXPIRES: MARCH 17, 2002

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SOURCE

Buildings 1 & 2 (MOD I & MOD II)

3. MONITORING REQUIREMENTS

3.1 Emergency Generator Hours of Operation

The Permittee shall maintain a written log of all times when the emergency generator is operating for both maintenance and emergency periods. The duration of generator operation, as well as reason for operation, shall be recorded.

3.2 Chemical Usage Data

On a monthly basis, the Permittee shall monitor and record the following parameters about each chemical used.

3.3.1 Chemical name;

3.3.2 Name of each component of each chemical;

3.3.3 Decimal percent by weight composition of each constituent of each chemical;

3.3.4 Bottle size, in pounds (lbs.), of each chemical;

3.3.5 Number of bottles of each chemical used; and

3.3 Hazardous Waste Analysis Data

3.3.1 The Permittee shall record the percent by weight water content of each shipment of hazardous waste generated that contains VOC.

3.3.2 The Permittee shall record the mass, in lbs., of each shipment of hazardous waste generated that contains VOC. Mass shall be determined by multiplying the actual density of the hazardous waste shipment by the volume of the shipment if the mass of the shipment is not directly measured. If the mass is not directly measured, the density and volume of the hazardous waste shipment shall be recorded.

3.4 Determination of Mass of Constituents Used and Shipped as Hazardous Waste

For each month of the time period for which the hazardous waste identified in Section 3.3.1 of this permit was collected and for each constituent of each chemical used, the Permittee shall perform the calculations included in, and record the result of, the following equations using the actual water content of the hazardous waste:

$$3.4.1 \quad M_{\text{CONSTITUENT USED}} = \% \text{COMPOSITION} * M_{\text{BOTTLE}} * \# \text{BOTTLES}$$

where:

$M_{\text{CONSTITUENT USED}}$ = mass, in lbs., of each chemical constituent containing VOCs used;

$\% \text{COMPOSITION}$ = decimal percent by weight composition of each constituent of each chemical;

M_{BOTTLE} = bottle size, in pounds (lbs.), of each chemical;

$\# \text{BOTTLES}$ = number of bottles of used;

ISSUED: MARCH 17, 1997
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Buildings 1 & 2 (MOD 1 & MOD II)

$$3.4.2 \quad P_{\text{CONSTITUENT}} = (M_{\text{CONSTITUENT USED}} \div M_{\text{TOTAL USED}})$$

where:

$P_{\text{CONSTITUENT}}$ = calculated decimal percentage of chemical constituent containing VOCs used found in hazardous waste;
 $M_{\text{TOTAL USED}}$ = total mass, in lbs., of chemicals used found in the hazardous waste;

$$3.4.3 \quad M_{\text{WASTE}} = M_{\text{SHIPMENT}} * P_{\text{CONSTITUENT}} (1 - \%H_2O)$$

where:

M_{SHIPMENT} = mass, in lbs., of constituent shipped as hazardous waste;
 M_{WASTE} = mass, in lbs., of each constituent of each chemical
 $\%H_2O$ = water content, in decimal percent by weight, of hazardous water;

3.5 Determination of VOC Emission Rate

$$3.5.1 \quad ER_{\text{VOC CONSTITUENT}} = M_{\text{VOC CONTAINING CONSTITUENT USED}} - M_{\text{VOC CONTAINING WASTE}}$$

where:

$ER_{\text{VOC CONSTITUENT}}$ = VOC emission rate of constituent, in lbs. per month;
 $M_{\text{VOC CONTAINING WASTE}}$ = M_{WASTE} determined in 3.4.3 this is a VOC

$$3.5.2 \quad ER_{\text{TOTAL VOC}} = \sum ER_{\text{VOC CONSTITUENT}}$$

where:

$ER_{\text{TOTAL VOC}}$ = Sum of VOC emission rates of all constituent of all chemicals used, in lbs. per month.

3.6 Determination of HAP Emission Rate

$$3.6.1 \quad ER_{\text{NON-VOC HAP CONSTITUENT}} = M_{\text{NON-VOC HAP CONTAINING CONSTITUENT USED}} * (1 - \%Wastewater),$$

where:

$ER_{\text{NON-VOC HAP CONSTITUENT}}$ = VOC HAP emission rate of constituent, in lbs. per month;
 $\%Wastewater$ = decimal percent of constituent found in wastewater;

$$3.6.2 \quad ER_{\text{TOTAL HAP}} = \sum ER_{\text{NON-VOC HAP CONSTITUENT}} + \sum ER_{\text{VOC HAP CONSTITUENT}}$$

where:

$ER_{\text{TOTAL HAP}}$ = Sum of HAP emission rates of all constituent of all chemicals used, in lbs. per month.
 $\sum ER_{\text{VOC HAP CONSTITUENT}}$ = Sum of VOC HAP emission rates of all constituent of all chemicals used, in lbs. per month.

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SOURCE

Buildings 1 & 2 (MOD I & MOD II)

3.7 VOC and HAP Emissions - Preliminary Determination

For each month of the time period prior to when hazardous waste identified in Section 3.3 of this permit is collected, the Permittee shall perform the calculations included in Sections 3.4, 3.5, and 3.6 of this permit using the mass and water content data from the most recent hazardous waste shipment. The Permittee shall record monthly the result of each of the equations in Section 3.4 of this permit.

4. REPORTING AND RECORDKEEPING REQUIREMENTS

4.1 Exceedance Report

The Permittee shall report any exceedances of any limits set in Section 2 of this permit to DEQ within a reasonable time of discovering the exceedance. Included with this report shall be a description of any corrective action taken to remedy the cause of the exceedance.

4.2 Emergency Generators

The Permittee shall record, in a monthly report, the information requested in Section 3.1 of this permit. This report shall be maintained on file by the Permittee for the most recent five (5) year period and made available to DEQ representatives upon request.

4.3 Chemical Usage, Waste Generated, and VOC and HAP Emissions

The Permittee shall record, in a monthly report, the information requested in Sections 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7 of this permit. This report shall be maintained on file by the Permittee for the most recent five (5) year period and made available to DEQ representatives upon request.

4.4 Certification of Documents

All documents, including but not limited to, records, monitoring data, supporting information, testing reports, or compliance certifications submitted to DEQ shall contain a certification by responsible official, in accordance with IDAPA 16.01.01.123 (Rules for the Control of Air Pollution in Idaho). The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

ISSUED: MARCH 17, 1997
 EXPIRES: MARCH 17, 2002

ARCHIVED BY DEQ 03/17/2002

AIR POLLUTION OPERATING PERMIT

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SOURCE

Buildings 1 & 2 (MOD I & MOD II)

APPENDIX A

ZILOG, INCORPORATED - NAMPA

EMISSION LIMITS^a -- MONTHLY (lb/month) AND ANNUAL^b (ton/yr)

SOURCE DESCRIPTION	NO _x		VOC		HAP	
	lb/month	T/yr	lb/month	T/yr	lb/month	T/yr
Building 1, Boilers #1-#3 Common Stack	1452	8.71	77	0.46	--	--
Building 1, Emergency Generator #1	271	1.60	7	0.042	--	--
Building 1, Emergency Generator #2	605	3.56	16	0.09	--	--
Building 2, Boiler #1	612	3.67	47	0.28	--	--
Building 2, Boiler #2	612	3.67	47	0.28	--	--
Building 2, Emergency Generator #1	605	3.56	16	0.095	--	--
Building 2, Emergency Generator #2	742	4.36	20	0.12	--	--
Buildings 1 & 2	--	--	17,272	69.09	2,426	9.70

- a As determined by a pollutant specific promulgated U.S. EPA method, or DEQ approved alternative, or as determined by DEQ's emission estimation methods used in this permit analysis.
- b As determined by multiplying the actual or allowable (if actual is not available) pound per month emission rate by the actual months per twelve month period that the process operates.

ISSUED: MARCH 17, 1997
 EXPIRES: MARCH 17, 2002

- I. Performance tests (i.e.; air emission source tests) conducted pursuant to testing requirements in this permit must be conducted in accordance with DEQ's **Procedures Manual for Air Pollution Control**. Such testing shall not be conducted on weekends or state holidays unless the Permittee obtains prior DEQ approval.

The Permittee shall submit a test protocol and a proposed test date for each performance test required by this permit to DEQ for approval at least thirty (30) days prior to each respective test date (including each test date for periodic tests such as, for example, annual tests). The Permittee shall promptly notify DEQ of any change in the proposed test date and shall provide at least five (5) working days advanced notice prior to conducting any rescheduled test, unless DEQ approves a shorter notice period.

Within forty-five (45) days of the date on which a performance test required by this permit is concluded, the Permittee shall submit to DEQ a performance test report for the respective test. The performance test report shall include any and all process operating data required to be recorded during the test period as well as the test results, raw test data, and associated documentation.

The maximum allowable source operating rate shall be limited to 120% of the average operating rate attained during the most recent performance test conducted pursuant to this permit which demonstrated compliance with the respective pollutant emission limit unless; (1) a more restrictive operating limit is specified elsewhere in this permit or; (2) at such an operating rate, emissions would exceed any emission limit(s) set forth in this permit.

- J. The provisions of this permit are severable; and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

ISSUED: MARCH 17, 1997
EXPIRES: MARCH 17, 2002

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**Response to Comments and Questions Submitted During a
Public Comment Period on Zilog, Incorporated (Nampa)
Proposed Tier II Operating Permit (OP# 027-00056) for the Entire Facility**

I. INTRODUCTION

A public comment period on Zilog, Incorporated's permit application and proposed operating permit was held from February 12, 1997, through March 14, 1997. The application was submitted in order to permit the facility as a synthetic minor source. Information was made available to the public at the Nampa Public Library and DEQ Central Office in Boise. Comments and questions were received by the Department of Health and Welfare (the Department) in the form of written comments submitted to the Department.

Public comments which concern air quality aspects of the facility application and proposed Permit have been summarized below. Each comment is numbered and followed by the Department's response. Some comments may have been combined and paraphrased in order to eliminate duplication and provide a clearer summary. Responses discuss only the facts necessary to address the comment. An appendix is provided which lists the name of each person who provided the comments.

Only comments, questions, and suggestions specifically pertaining to the proposed permit and the permit application are addressed in this document.

II. COMMENTS AND RESPONSES

Comment #1: Remove the credit for all VOC emissions captured by the facility's wastewater.

DEQ Response: The VOC credit has been removed from the emission estimates. The emission estimates now correspond to the language in the technical analysis memorandum. The proposed permit has been changed as a result of the change in the emission estimates.

Comment #2: Remove scrubber control efficiency from emission estimate calculations.

DEQ Response: The scrubber control efficiency values have been removed from all of the emission estimate calculations. The emission estimates now correspond to the language in the technical analysis memorandum

Comment #3: Change permitted VOC limits to reflect changes requested in Comments #1 and #2.

DEQ Response: The proposed permit has been updated to reflect the changes requested in Comments #1 and #2.